

## CLAIM AMENDMENTS

Please amend the claims as described below. In accordance with 37 CFR §1.121, a complete listing of all claims in the application is provided below. Notably, the status of each claim is indicated in the parenthetical expression adjacent to the corresponding claim number.

Claims 1 - 27 (**Canceled**).

1        28. (**Currently Amended**): A semiconductor memory cell including at least one  
2 transistor to constitute the memory cell, the memory cell comprising:  
3        a source region;  
4        a drain region;  
5        a body region disposed between ~~and adjacent to~~ the source region and the drain  
6 region, wherein the body region is electrically floating; and  
7        a gate disposed over the body region; and  
8        wherein the memory cell includes:  
9            a first data state representative of a first charge in the body region; and  
10           a second data state representative of a second charge in the body region  
11 wherein the second charge is substantially provided by removing charge from the  
12 body region through the source region.

1        29. (**Previously Presented**): The memory cell of claim 28 wherein the first  
2 charge is comprised of an accumulation of majority carriers in the body region.

1           30. **(Previously Presented):** The memory cell of claim 29 wherein the body  
2 region is comprised of a P-type semiconductor material and the source and drain  
3 regions are comprised of an N-type semiconductor material.

1           31. **(Previously Presented):** The memory cell of claim 29 wherein the majority  
2 carriers accumulate in a portion of the body region that is adjacent to the source region.

1           32. **(Previously Presented):** The memory cell of claim 28 wherein positive  
2 voltages are applied to the drain region and the gate to provide the second charge in  
3 the body region.

1           33. **(Previously Presented):** The memory cell of claim 28 wherein positive  
2 voltages are applied to the drain region and the gate to remove at least the first charge  
3 from the body region.

1           34. **(Previously Presented):** The memory cell of claim 33 wherein, in response  
2 to positive voltages being applied to the drain region and the gate, the transistor of the  
3 memory cell includes a junction between the body region and the source region,  
4 wherein the junction is forward biased.

1           35. **(Previously Presented):** The memory cell of claim 33 wherein, in response  
2 to the positive voltages being applied to the drain region and the gate, the transistor of

3 the memory cell includes a forward bias current between the body region and the  
4 source region.

1 36. **(Previously Presented)**: The memory cell of claim 33 wherein the second  
2 charge is stored in the body region in response to removing the positive voltages from  
3 the drain region and the gate.

1 37. **(Currently Amended)**: A semiconductor memory cell including at least one  
2 transistor to constitute the memory cell, the memory cell comprising:

3 a source region having impurities to provide a first conductivity type;

4 a drain region having impurities to provide the first conductivity type;

5 a body region disposed between and adjacent to the source region and the drain  
6 region wherein the body region is electrically floating and includes impurities to provide  
7 a second conductivity type wherein the second conductivity type is different from the  
8 first conductivity type;

9 a gate disposed over the body region;

10 wherein the memory cell includes:

11 a first data state representative of a first charge in the body region wherein  
12 the first charge is substantially provided by impact ionization; and

13 a second data state representative of a second charge in the body region  
14 wherein the second charge is substantially provided by removing charge from the  
15 body region through the source region.

1           38. **(Previously Presented):** The memory cell of claim 37 wherein the first  
2 charge is comprised of majority carriers and wherein the second conductivity type is a  
3 P-type.

1           39. **(Previously Presented):** The memory cell of claim 37 wherein, in response  
2 to a first positive voltage applied to the drain region and a second positive voltage  
3 applied to the gate, at least the first charge is removed from the body region through the  
4 source region.

1           40. **(Previously Presented):** The memory cell of claim 39 wherein the memory  
2 cell, in response to the first and second positive voltages, includes a junction between  
3 the body region and the source region which is forwarded biased.

1           41. **(Previously Presented):** The memory cell of claim 40 wherein the first  
2 conductivity type is an N-type.

1           42. **(Previously Presented):** The memory cell of claim 41 wherein the second  
2 charge is stored in the body region in response to removing the first positive voltage  
3 from the drain region before removing the second positive voltage from the gate.

1           43. **(Previously Presented):** The memory cell of claim 41 wherein, in response  
2 to the first and second positive voltages, the transistor includes a forward bias current  
3 between the body region and the source region.

1           **44. (Previously Presented):** The memory cell of claim 43 wherein the second  
2 charge is stored in the body region in response to removing the first positive voltage  
3 from the drain region and the second positive voltage from the gate.

1           **45. (Previously Presented):** The memory cell of claim 37 wherein the first  
2 charge is stored in the body region in response to applying a first negative voltage to the  
3 drain region and a second negative voltage to the gate.

1           **46. (Previously Presented):** The memory cell of claim 45 wherein the transistor  
2 of the memory cell stores the first charge in a portion of the body region that is adjacent  
3 to the source region.

1           **47. (Currently Amended):** A semiconductor memory cell including at least one  
2 transistor to constitute the memory cell, the memory cell comprising:  
3           a source region having impurities to provide a first conductivity type;  
4           a drain region having impurities to provide the first conductivity type;  
5           a body region disposed between and adjacent to the source region and the drain  
6 region wherein the body region is electrically floating and includes impurities to provide  
7 a second conductivity type wherein the second conductivity type is different from the  
8 first conductivity type;  
9           a gate spaced apart from, and capacitively coupled to, the body region;  
10          wherein the memory cell includes:  
11           a first data state representative of a first charge in the body region; and

12                   a second data state representative of a second charge in the body region  
13           wherein the second charge is substantially provided by removing charge from the  
14           body region through the source region.

1           **48. (Previously Presented):** The memory cell of claim 47 wherein, in response  
2   to a first voltage applied to the drain region and a second voltage applied to the gate,  
3   the first charge is removed from the body region through the source region.

1           **49. (Previously Presented):** The memory cell of claim 48 wherein, in response  
2   to removing the first voltage from the drain region before removing the second voltage  
3   from the gate, the second charge is stored in the body region.

1           **50. (Previously Presented):** The memory cell of claim 48 wherein the second  
2   charge is stored in the body region in response to applying ground to the drain region  
3   before removing the second voltage from the gate.

1           **51. (Previously Presented):** The memory cell of claim 48 wherein the first  
2   voltage and the second voltage are positive voltages which, during operation, are  
3   applied for a finite duration.

1           **52. (Previously Presented):** The memory cell of claim 48 wherein the  
2   transistor, in response to the first voltage and the second voltage, includes a junction  
3   between the body region and the source region which is forwarded biased.

1           53. **(Previously Presented):** The memory cell of claim 52 wherein the first  
2 voltage and the second voltage are positive voltages which are applied for a finite  
3 duration.

1           54. **(Previously Presented):** The memory cell of claim 53 wherein, in response  
2 to the positive voltages being applied to the drain region and the gate, the transistor  
3 includes a forward bias current between the body region and the source region.

1           55. **(Previously Presented):** The memory cell of claim 54 wherein the transistor  
2 stores the second charge in the body region in response to a third voltage being applied  
3 to the drain region before a fourth voltage is applied to the gate.

1           56. **(Previously Presented):** The memory cell of claim 55 wherein the third and  
2 fourth voltages are ground.

1           57. **(Previously Presented):** The memory cell of claim 48 wherein the transistor  
2 stores the first charge in a portion of the body region that is adjacent to the source  
3 region.

1           58. **(Previously Presented):** The memory cell of claim 57 wherein the first  
2 charge is substantially provided by impact ionization.

1           59. **(Previously Presented):** The memory cell of claim 48 wherein, in response  
2 to a first positive voltage applied to the drain region and a second positive voltage  
3 applied to the gate, more than the first charge is removed from the body region through  
4 the source region.

1           60. **(Previously Presented):** The memory cell of claim 59 wherein the first  
2 positive voltage is less than the second positive voltage.